

REMARKS

Claims 1-10 and 27-42 will be pending in the current Application upon entering this Amendment. Claims 1, 2, 8, and 9 have been amended; claims 11-26 have been cancelled; and claims 27-42 have been added. Applicants submit that the amendments do not add new matter to the current Application. Applicants also submit that (1) no amendment made was related to the statutory requirements of patentability unless expressly stated herein, and (2) no amendment made was for the purpose of narrowing the scope of any claim, unless Applicants have argued herein that such amendment was made to distinguish over a particular reference or combination of references.

Claims 1-10 and 27-32

Applicants respectfully submit that claims 1-10 and 27-32 are patentable over the cited references. In the current Office Action, claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,369,438 (hereinafter referred to as Sugiyama). Applicants submit that claim 1 is patentable over Sugiyama because Sugiyama does not teach or suggest each and every element of claim 1. For example, Applicants have clarified claim 1 to state that the second layer is epitaxially grown "directly on" the first layer, and have included in claim 1 "forming a transistor, wherein a channel of the transistor is formed only in the second layer." These are some of the elements of claim 1 that are not taught or suggested by Sugiyama. For example, referring to Sugiyama, note that SiGe layer 13 is the layer formed directly on oxygen-containing crystal silicon layer 12. However, as seen in FIG. 5 of Sugiyama, the channel of the transistor is not formed only in layer 13a, but it is formed in an additional crystal Si layer 14a formed over layer 13a. Therefore, unlike claim 1, the transistor of Sugiyama is not formed such that a channel of the transistor is formed only in the second layer. Furthermore, if one were to modify Sugiyama to form the channel in only the second layer of Sugiyama (which would be layer 13a), then the functionality of Sugiyama would be destroyed because additional crystal Si layer 14 is necessary in order to achieve the desired strain, which is the primary goal of Sugiyama. Therefore, for at least these reasons, Applicants submit that claim 1 is allowable over Sugiyama.

Claims 2-10 and 27-32 also depend directly or indirectly from allowable claim 1 and are therefore also allowable for at least those reasons provided with respect to claim 1.

Claim 2 has been amended to further include that a deep source and a deep drain of the transistor are formed in only the second layer. Again, as described above in reference to claim 1, Sugiyama forms an additional crystal Si layer 14a over layer 13a (which is the layer formed directly on oxygen-containing crystal silicon layer 12). Therefore, the source and drain of Sugiyama are not formed in only layer 13a, but are formed in both layers 14a and 13a. Furthermore, as also discussed above, the functionality of Sugiyama would be destroyed if the source and drain of Sugiyama were to be formed only in layer 13a, and layer 14a cannot be removed from Sugiyama because it is necessary to achieve the desired strain. Therefore, for at least these additional reasons, Applicants submit that claim 2 is allowable over Sugiyama.

Applicants have also added new claims 27-32 which depend from allowable claim 1. Claims 27 and 30 further clarify that the deep source and deep drain extend to the semiconductor-oxide layer, which is also not taught or suggested by Sugiyama. Furthermore, in Sugiyama, the source and drain do not extend all the way to layer 12a because layer 13a needs to be maintained sufficiently thick in order to achieve the proper strain. As seen in FIG. 5, Sugiyama does not form a fully depleted device. Claim 29 further clarifies that there is no intervening semiconductor layer between the second layer and a gate dielectric of the transistor, which is also not taught or suggested by Sugiyama. Sugiyama clearly needs the additional semiconductor layer 14a between layer 13a and the gate dielectric, and without layer 14a, the functionality of Sugiyama would be destroyed. Claim 32 further clarifies that the gate dielectric is formed directly on the second layer, which is also not taught or suggested by Sugiyama, which only discusses the formation of a gate dielectric on layer 14a and not directly on layer 13a. Again, if the gate dielectric of Sugiyama were to be formed directly on layer 13a, the functionality would be destroyed because the desired strain could not be achieved without layer 14a. Therefore, for these additional reasons, Applicants submit that claims 27-32 are allowable over Sugiyama.

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Claims 11-26

Note that Applicants have cancelled claims 11-26, without prejudice. Therefore, any rejection of these claims is now moot.

Claims 33-39

Applicants respectfully submits that new claims 33-39 are patentable over the cited references. Note that claim 33 is similar to original claim 1; however, Applicants have further clarified that the second layer is epitaxially grown "directly on" the first layer, and have included in claim 33 "forming a gate dielectric on the second layer, wherein there is no semiconductor layer between the gate dielectric and the second layer." Applicants submit that claim 33 is allowable over Sugiyama since Sugiyama does not teach or suggest each and every element of claim 33. For example, note that, in Sugiyama, there is a semiconductor layer (14a) between layer 13a (the layer formed directly on layer 12a) and the gate dielectric of the transistor. Furthermore, this semiconductor layer 14a, as discussed above, is needed for proper functionality of Sugiyama. Claims 34-39 all depend directly or indirectly from allowable claim 33 (and note that most are similar to claims dependent off of claim 1, some of which are discussed above), and are therefore allowable for at least those reasons which apply to claim 33.

Claims 40-42

Applicants respectfully submits that new claims 40-42 are patentable over the cited references. Note that claim 40 is similar to original claim 1; however, Applicants have further clarified that the substrate includes first and second isolation regions, that the first layer is selectively formed between the first and second isolation regions, and that the second layer is selectively epitaxially grown directly on the first layer between the first and second isolation regions wherein the second layer is not formed on the first and second isolation regions. Applicants submit that claim 40 is allowable over Sugiyama since Sugiyama does not teach or suggest each and every element of claim 40. For example, note that, in Sugiyama, there is no

teaching or suggestion of forming layers 12 and 13 selectively, between two isolation regions. Furthermore, even if isolation regions were present in Sugiyama, the use of the method to form layer 12 described in Sugiyama (e.g. col. 5, lines 25-45) would result in layer 12 being formed over isolation regions as well, since, for example, no etchant is used as part of the raw material during the formation of layer 12. Claims 41 and 42 depend directly or indirectly from allowable claim 40 (and are similar to other dependent claims which are further discussed above), and are therefore allowable for at least those reasons which apply to claim 40.

Conclusion

Although Applicants may disagree with statements made by the Examiner in reference to the claims and the cited references, Applicants are not discussing all these statements in the current Office Action since reasons for the patentability of each pending claim is provided without addressing these statements. Therefore, Applicants reserve the right to address them at a later time if necessary.

Applicant respectfully solicits allowance of the pending claims. Contact me if there are any issues regarding this communication or the current Application.

If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 503079, Freescale Semiconductor, Inc.

Respectfully submitted,

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